west virginia department of environmental protection

Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
Phone: (304) 926-0475
Fax: (304) 926-0479

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

BACKGROUND INFORMATION

Application No.:	R13-3350
Plant ID No.:	103-00098
Applicant:	Ascent Resources-Marcellus, LLC
Facility Name:	WJ Criswell 405
Location:	Four Mile Rd, Wileyville, WV
NAICS Code:	2111111
Application Type:	Modification
Received Date:	November 16, 2016
Engineer Assigned:	Jonathan Carney
Fee Amount:	$2000.00
Date Received:	November 17, 2016
Complete Date:	December 14, 2016
Due Date:	March 13, 2016
Applicant Ad Date:	November 16, 2016
Newspaper:	Wetzel Chronicle
UTM's:	Easting: 532.769 km Northing: 4,384.25 km Zone: 17
Description:	Removing one (1) natural gas-fired compressor engine and updating the productionand tank information and requesting a conversion to a Rule 13 permit from G70-A124B issued August 18, 2015.

DESCRIPTION OF PROCESS

The following description is from the application having the application number 13-3350:

Natural gas, condensate, and produced water flow from the three (3) wellheads located on the WJ Criswell 405 facility. The inlet streams are first routed through the three (3) 1.5 million British thermal units per hour (MMBtu/hr) gas production units (GPUs) (GPU-1 to GPU-3) where the first stage of fluid separation occurs. The GPUs separate the well stream flow into a high pressure natural gas sales stream and condensate liquid stream. In the second stage of separation, the liquid streams are routed through one (1) 1.5 MMBtu/hr line heater (HTR-1) to aid in the downstream separation process.

The fluids are then routed to the 1.0 MMBtu/hr low pressure flash separator heater (SEP-1) where condensate and produced water are separated. The flash from the low pressure separator is sent to the storage tanks, which are controlled by an enclosed combustor (CTRL-1). Produced water from the flash separator is routed to three (3) 400-bbl produced water storage tanks (PTK-1 to PTK-3). The condensate from the flash separator is typically routed to the three (3) 400-bbl condensate storage tanks (CTK-1 to CTK-3).

The natural gas stream will exit the facility for transmission via pipeline. Condensate and produced water are transported offsite via tank truck (TRL-1 and TRL-2). Flashing, working, and breathing, emissions from the three (3) 400-bbl produced water storage tanks and three (3) 400-bbl condensate storage tanks will be routed to the enclosed combustion device (CTRL-1).

A 1,200 bbl/day condensate stabilizer with a 0.75 MMBtur/hr burner assembly (CS-1) raises the temperature of the condensate and drives off hydrocarbons. These hydrocarbons are then transferred under pressure to the natural gas liquids (NGL) tank on site. The depleted condensate stream is transferred to the three (3) 400-bbl condensate storage tanks.

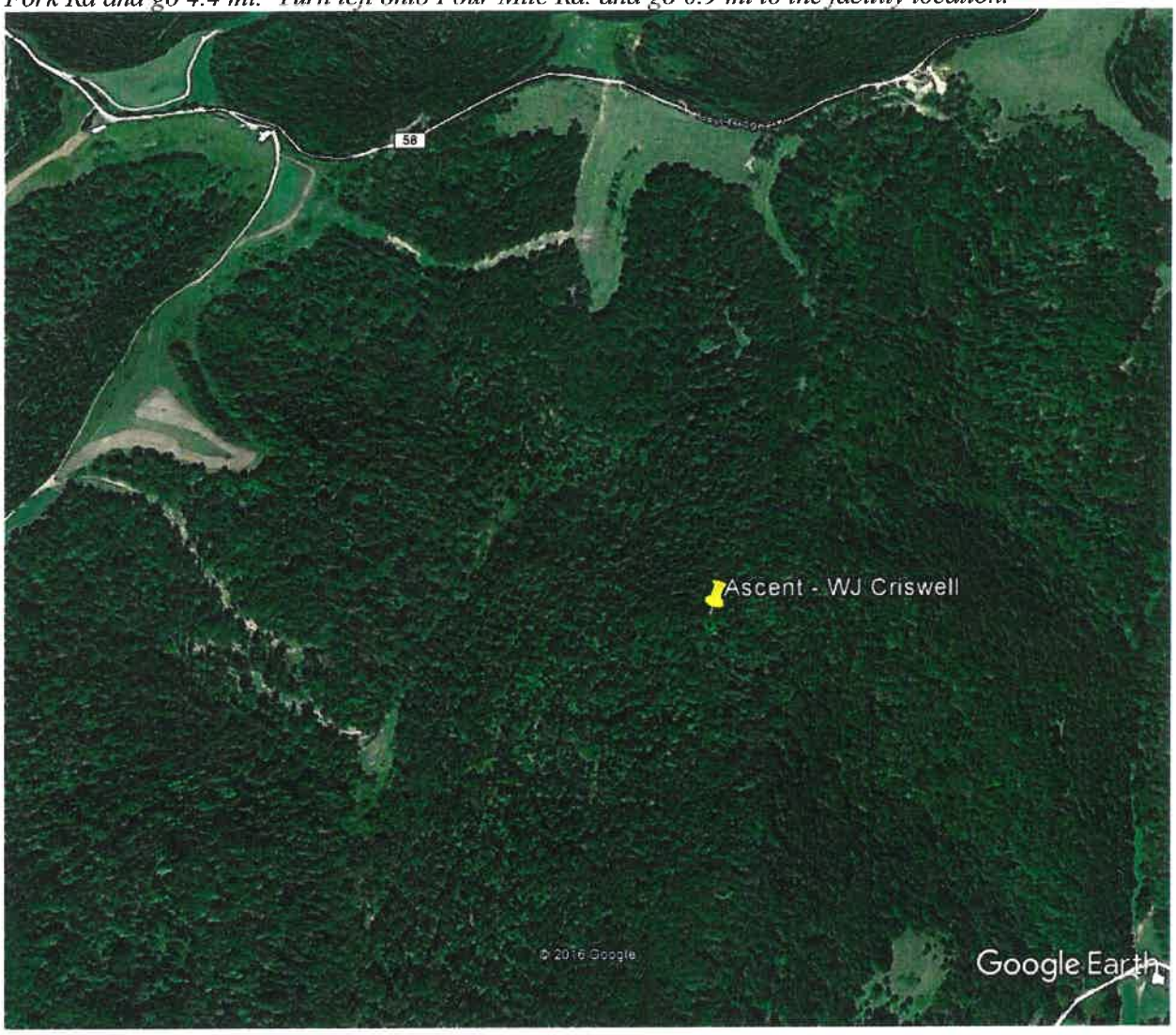
Loading of the condensate tank directly from the flash separator without the use of the condensate stabilizer shall occur as field conditions deem it necessary based upon condensate production.

One (1) 47 horsepower (hp) HiPower prime-power natural gas generator (ENG-2) is located on-site for facility electrical generation.

SITE INSPECTION

A full on site inspection was performed by DEP inspector, Mr. Greigory Paetzold. The overall result of the inspection was in compliance.

Directions: From Wileyville, WV, head south on Fairview Ridge Rd. toward WV-7 W. Turn left at the first cross street onto WV-7 E for 1.6 mi. Turn right onto Barker Run Rd. and go 3.6 mi. Turn left onto N Fork Rd and go 4.4 mi. Turn left onto Four Mile Rd. and go 0.9 mi to the facility location.



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this application consist of the combustion emissions from three (3) gas production units, one (1) line heater, one (1) flash separator heater, one (1) condensate stabilizer heater, one (1) enclosed combustor and one (1) generator and the VOC and HAP emissions from storage tanks, and liquid loading operations..

Emission Point ID#	Process Equipment	Calculation Methodology
GPU-1 through GPU-3	1.50 MMBTU/hr Gas Production Units	EPA AP-42 Emission Factors
HTR-1	1.50 MMBTU/hr Line Heater	EPA AP-42 Emission Factors
SEP-1	1.00 MMBTU/hr Flash Separator Heater	EPA AP-42 Emission Factors
CS-1	0.75 MMBTU/hr Condensate Stabilizer Heater	EPA AP-42 Emission Factors
CTK-1 through CTK-3	400 bbl Condensate Storage Tanks	EPA Tanks 4.09
PTK-1 through PTK-3	400 bbl Produced Water Storage Tank	EPA Tanks 4.09
CRTL-1	18.42 MMBTU/hr Enclosed Combustor	EPA AP-42 Emission Factors
TRL-1	Condensate Truck Loading	EPA AP-42 Emission Factors
TRL-2	Produced Water Truck Loading	EPA AP-42 Emission Factors
ENG-2	47 hp HiPower PSI/GM 3.0L Generator	Manufacturer's Data, EPA AP-42 Emission Factors/40 CFR 60 Subpart JJJJ

The change in total facility PTE for the WJ Criswell 405 facility is shown in the following table:

Pollutant	G70-A124B PTE (tons/year)	R13-3350 PTE (tons/year)	PTE Change (tons/year)
Nitrogen Oxides	12.71	10.07	-2.64
Carbon Monoxide	13.32	34.82	21.50
Volatile Organic Compounds	6.62	14.06	7.44
Particulate Matter-10/2.5	4.19	0.28	-3.91
Total HAPs	0.41	0.17	-0.21
Carbon Dioxide Equivalent	13,986	17,803	3,817

Maximum detailed controlled point source emissions were calculated by Ascent Resources – Marcellus, LLC and checked for accuracy by the writer and are summarized in the table on the next page.

Emission Point ID#	Emission Point ID#	Emission Unit Description	NOx		CO		VOC		PM_{10}		SO_2		Total HAPs	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
GPU-1	1E	Gas Production Unit	0.15	0.64	0.12	0.54	0.01	0.04	0.01	0.05	<0.01	<0.01	0.003	0.01
GPU-2	2E	Gas Production Unit	0.15	0.64	0.12	0.54	0.01	0.04	0.01	0.05	<0.01	<0.01	0.003	0.01
GPU-3	3E	Gas Production Unit	0.15	0.64	0.12	0.54	0.01	0.04	0.01	0.05	<0.01	<0.01	0.003	0.01
HTR-1	4E	Line Heater	0.15	0.64	0.12	0.54	0.01	0.04	0.01	0.05	<0.01	<0.01	0.003	0.01
SEP-1	7E	Flash Separator Heater	0.10	0.43	0.08	0.36	0.01	0.02	0.01	0.03	<0.01	<0.01	0.002	0.01
CS-1	11E	Condensate Stabilizer Heater	0.07	0.32	0.06	0.27	<0.01	0.02	0.01	0.02	<0.01	<0.01	<.0.01	0.01
CTK-1	15E	Condensate Storage Tank	-	-	-	-	-	1.82	-	-	-	-	-	-
CTK-2	16E	Condensate Storage Tank	-	-	-	-	-	1.82	-	-	-	-	-	-
CTK-3	17E	Condensate Storage Tank	-	-	-	-	-	1.82	-	-	-	-	-	-

Emission Point ID#	Emission Point ID#	Emission Unit Description	NOx		CO		VOC		PM_{10}		SO_2		Total HAPs	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
PTK-1	18E	Produced Water Storage Tank	-	-	-	-	-	0 .01	-	-	-	-	-	-
PTK-2	19E	Produced Water Storage Tank	-	-	-	-	-	0.01	-	-	-	-	-	-
PTK-3	20E	Produced Water Storage Tank	-	-	-	-	-	0.01	-	-	-	-	-	-
CRTL-1	10E	Enclosed Combustor	1.22	5.36	6.82	29.85	1.35	5.90	-	-	-	-	-	-
TRL-1	12E	Condensate Truck Loading	-	-	-	-	58.95	2.82	-	-	-	-	-	-
TRL-2	13E	Produced Water Truck Loading	-	-	-	-	0.59	0.14	-	-	-	-	<0.01	<0.01
ENG-2	9E	HiPower PSI/GM 3.0L Generator	0.29	1.27	0.50	2.18	0.01	0.05	0.01	0.03	<0.01	<0.01	0.02	0.07
FUG-1	14E	Sitewide Fugitive	-	-	-	-	2.13	9.27	-	-	-	-	-	-
ROAD-1	21E	Unpaved Road Sources	-	-	-	-	-	-	0.22	0.96	-	-	-	-

REGULATORY APPLICABILITY

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

The purpose of 45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers) is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units.

45CSR2 states that any fuel burning unit that has a heat input under ten (10) MMBTU/hr is exempt from Sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat input of the gas production units (GPU-1 through GPU-3), line heater (HTR-1), flash separator heater (SEP-1) and condensate stabilizer heater (CS-1) are below 10 MMBtu/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR2.

Ascent Resources -Marcellus, LLC is subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

45CSR6 (To Prevent and Control Air Pollution from the Combustion of Refuse)

45CSR6 prohibits open burning, establishes emission limitations for particulate matter, and establishes opacity requirements. Sources subject to 45CSR6 include completion combustion devices, enclosed combustion devices, and flares.

Ascent Resources -Marcellus, LLC has one (1) enclosed combustor at the facility. The enclosed combustor is subject to section 4, emission standards for incinerators. The enclosed combustor has negligible hourly particulate matter emissions. Therefore, the facility's enclosed combustor should demonstrate compliance with this section. The facility will demonstrate compliance by maintaining records of the amount of natural gas consumed by the enclosed combustor. The facility will also monitor the pilot flame of the enclosed combustor and record any malfunctions that may cause no flame to be present during operation.

45CSR10 (To Prevent and Control Air Pollution from the Emission of Sulfur Oxides)

45CSR10 establishes emission limitations for SO_2 emissions which are discharged from stacks of fuel burning units. A "fuel burning unit" means and includes any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. Sources that meet the definition of "Fuel Burning Units" per 45CSR10-2.8 include GPUs, in-line heaters, heater treaters, and glycol dehydration unit reboilers.

It is written in 45CSR10 that a fuel burning unit with a heat input of less than 10 MMBtu/hr is exempt from sections 3 (weight emission standard), 6 (registration), 7 (permits), and 8 (testing, monitoring, recordkeeping, reporting). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat input of the gas production units (GPU-1 through GPU-3), line heater (HTR-1), and flash separator heater (SEP-1) and condensate stabilizer heater (CS-1) are below 10 MMBtu/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR10.

45CSR13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)

A 45CSR13 modification permit applies to this source due to the fact that Ascent Resources – Marcellus, LLC modification results in an emissions increase of volatile organic compounds greater than 6 lb/hr and 10 tpy and is subject to a substantive requirement of an emission control rule (40CFR60 Subpart JJJJ).

Ascent Resources – Marcellus, LLC paid the appropriate application fee and published the required legal advertisement for a modification permit application.

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to this source by reference of 40CFR60 Subparts JJJJ and OOOO. These requirements are discussed under those rules below.

45CSR22 (Air Quality Management Fee Program)

Ascent Resources – Marcellus, LLC is not subject to 45CSR30. The WJ Criswell 405 well pad is subject to 40CFR60 Subparts JJJJ and OOOO, however they are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided they are not required to obtain a permit for a reason other than their status as an area source.

Ascent Resources – Marcellus, LLC is required to pay the appropriate annual fees and keep their Certificate to Operate current.

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

Subpart JJJJ sets forth nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compound (VOC) emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. The 47 hp HiPower PSI/GM 3.0L Generator has an EPA certified engine. Maintenance and operation of this engine generator according to manufacturer instructions is required for this engine to continue to remain certified.

40CFR60, Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after August 23, 2011, and on or before September 18, 2015)

EPA published in the Federal Register new source performance standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. 40CFR60 Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO_2) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011. The following affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this subpart:
Each gas well affected facility, which is a single natural gas well.

The WJ Criswell 405 well pad consists of four (4) natural gas wells. The wells were constructed after the August 23, 2011 applicability date. Therefore, the gas wells located at the facility are subject to the requirements of this subpart.

a. Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your centrifugal compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

There are no centrifugal compressors at the WJ Criswell 405 well pad. Therefore, all requirements regarding centrifugal compressors under 40 CFR 60 Subpart OOOO would not apply.

b. Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your reciprocating compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

There is one reciprocating internal combustion engines located at the WJ Criswell 405 well pad that were constructed after August 23, 2011. However, a reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

c. Pneumatic Controllers

- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh which commenced construction after August 23, 2011, and is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not located at a natural gas processing plant.

- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller which commenced construction after August 23, 2011, and is located at a natural gas processing plant.

No pneumatic controllers were listed in the application.

d. Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.

40CFR60 Subpart OOOO defines a storage vessel as a unit that is constructed primarily of non-earthen materials (such as wood, concrete, steel, fiberglass, or plastic) which

provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

- Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If the source does not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.

- Process vessels such as surge control vessels, bottoms receivers or knockout vessels.

- Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere.

This rule requires that the permittee determine the VOC emission rate for each storage vessel affected facility utilizing a generally accepted model or calculation methodology within 30 days of startup, and minimize emissions to the extent practicable during the 30 day period using good engineering practices. For each storage vessel affected facility that emits more than 6 tpy of VOC, the permittee must reduce VOC emissions by 95% or greater within 60 days of startup. The compliance date for applicable storage vessels is October 15, 2013.

The storage vessels located at the WJ Criswell 405 well pad are controlled by an enclosed combustor which will reduce the potential to emit to less than 6 tpy of VOC. Therefore, is not required by this section to further reduce VOC emissions by 95%.

e. The group of all equipment, except compressors, within a process unit is an affected facility.

- Addition or replacement of equipment for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

- Equipment associated with a compressor station, dehydration unit, sweetening unit, underground storage vessel, field gas gathering system, or liquefied natural gas unit is covered by §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart if it is located at an onshore natural gas processing plant. Equipment not located at the onshore natural gas processing plant site is exempt from the provisions of §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart.

- The equipment within a process unit of an affected facility located at onshore natural gas processing plants and described in paragraph (f) of this section are exempt from this subpart if they are subject to and controlled according to subparts VVa, GGG or GGGa of this part.

The WJ Criswell 405 well pad is not a natural gas processing plant. Therefore, Leak Detection and Repair (LDAR) requirements for onshore natural gas processing plants would not apply.

f. Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.

- Each sweetening unit that processes natural gas is an affected facility; and
- Each sweetening unit that processes natural gas followed by a sulfur recovery unit is an affected facility.
- Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H_2S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in §60.5423(c) but are not required to comply with §§60.5405 through 60.5407 and paragraphs 60.5410(g) and 60.5415(g) of this subpart.
- Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere are not subject to §§60.5405 through 60.5407, 60.5410(g), 60.5415(g), and 60.5423 of this subpart.

There are no sweetening units at the WJ Criswell 405 well pad. Therefore, all requirements regarding sweetening units under 40 CFR 60 Subpart OOOO would not apply.

40CFR63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines)

Subpart ZZZZ establishes national emission limitations and operating limitations for HAPs emitted from stationary RICE located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. The engine (ENG-1) at the WJ Criswell 405 well pad is subject to the area source requirements for non-emergency spark ignition engines.

The applicability requirements for new stationary RICEs located at an area source of HAPs, is the requirement to meet the standards of 40CFR60 Subpart JJJJ. These requirements were outlined above. The proposed engine meets these standards.

The following rules do not apply to the facility:

45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants)

45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment)

The WJ Criswell 405 well pad is located in Wetzel County, which is an unclassified county for all criteria pollutants, therefore the WJ Criswell 405 well pad is not applicable to 45CSR19.

As shown in the following table, Ascent Resources – Marcellus, LLC is not a major source subject to 45CSR14 or 45CSR19 review. According to 45CSR14 Section 2.43.e, fugitive emissions are not

included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, the fugitive emissions are not included in the PTE below.

Pollutant	PSD (45CSR14) Threshold (tpy)	NANSR (45CSR19) Threshold (tpy)	WJ Criswell 405 PTE (tpy)	45CSR14 or 45CSR19 Review Required?
Carbon Monoxide	250	NA	34.82	No
Nitrogen Oxides	250	NA	10.07	No
Particulate Matter 2.5	250	NA	0.28	No
Ozone (VOC)	250	NA	23.33	No

45CSR30 (Requirements for Operating Permits)

Ascent Resources – Marcellus, LLC is not subject to 45CSR30. The WJ Criswell 405 well pad is subject to 40CFR60 Subparts JJJJ and OOOO, however they are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided they are not required to obtain a permit for a reason other than their status as an area source.

40CFR60 Subpart Kb (Standards of Performance for VOC Liquid Storage Vessels)

40CFR60 Subpart Kb does not apply to storage vessels with a capacity less than 75 cubic meters. The largest tanks that Ascent Resources – Marcellus, LLC has installed are 60.8 cubic meters each. Therefore, Ascent Resources – Marcellus, LLC would not be subject to this rule.

40CFR60 Subpart KKK (Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants)

40CFR60 Subpart KKK applies to onshore natural gas processing plants that commenced construction after January 20, 1984, and on or Before August 23, 2011. The WJ Criswell 405 well pad was constructed after August 23, 2011 and , therefore, Ascent Resources – Marcellus, LLC's WJ Criswell 405 well pad is not subject to this rule.

40CFR60 Subpart OOOOa (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after September 18, 2015)

EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published amendments to the Subpart on September 23, 2013 and June 3, 2016. 40CFR60 Subpart OOOOa establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification or reconstruction after September 18, 2015. This subpart also establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO_2) emissions from affected facilities that commence construction, modification or reconstruction after September 18, 2015. The effective date of this rule is August 2, 2016.

For the purposes of 60.5397a (LDAR), a "modification" to a well site occurs when a new well is drilled at an existing well site, a well at an existing well site is hydraulically fractured or refractured. This has not occurred, therefore, for the purposes of LDAR, a "modification" has not occurred.

No modifications occurred in regards to this rule.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. The following HAPs are common to this industry. The following table lists each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

HAPs	Type	Known/Suspected Carcinogen	Classification
Formaldehyde	VOC	Yes	Category B1 - Probable Human Carcinogen
Benzene	VOC	Yes	Category A - Known Human Carcinogen
Ethylbenzene	VOC	No	Inadequate Data
Toluene	VOC	No	Inadequate Data
Xylenes	VOC	No	Inadequate Data

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health effects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals*. For a complete discussion of the known health effects of each compound refer to the IRIS database located at *www.epa.gov/iris*.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) or 45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment) as shown in the table listed in the Regulatory Discussion section under 45CSR14/45CSR19.

SOURCE AGGREGATION

"Building, structure, facility, or installation" is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.

The Source Determination Rule for the oil and gas industry was published in the Federal Register on June 3, 2016 and will become effective on August 2, 2016. EPA defined the term "adjacent" and stated that equipment and activities in the oil and gas sector that are under common control will be considered part of the same source if they are located on the same site or on sites that share equipment and are within ¼ mile of each other.

The Ascent Resources – Marcellus, LLC WJ Criswell 405 well pad will operate under SIC code 1311 (Natural Gas Production). There are other well pads operated by Ascent Resources – Marcellus, LLC that share the same two-digit major SIC code of 13 for natural gas production.

"Contiguous or Adjacent" determinations are made on a case by case basis. There are no other equipment and activities in the oil and gas sector that are under common control of Ascent Resources – Marcellus, LLC that are located on the same site or on sites that share equipment and are within ¼ mile of each other.

The WJ Criswell 405 well pad is not located on contiguous or adjacent properties with other facilities under common control, therefore, the emissions from this facility shall not be aggregated with other facilities for the purposes of making Title V and PSD determinations.

MONITORING OF OPERATIONS

Ascent Resources – Marcellus, LLC is required to perform the following monitoring:

- Monitor all applicable requirements of 40CFR60 Subparts JJJJ, OOOO, and 40CFR63 Subpart ZZZZ.
- Monitor the presence of the enclosed combustor pilot flames with a thermocouple or equivalent.
- Monitor for visible emissions from combustion units at such reasonable times as the Secretary may designate.

Ascent Resources – Marcellus, LLC will be required to perform the following recordkeeping:

- Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location
- Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
- Maintain records of the visible emission opacity tests conducted per the permit.
- Maintain a record of all potential to emit (PTE) HAP calculations for the entire facility. These records shall include the natural gas compressor engines and ancillary equipment.
- Maintain records of all applicable requirements of 40CFR60 Subparts JJJJ and OOOO and 40CFR63 Subpart ZZZZ.
- Maintain records of the enclosed combustors design evaluation.
- The records shall be maintained on site or in a readily available off-site location maintained by Ascent Resources – Marcellus, LLC for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates Ascent Resources – Marcellus, LLC WJ Criswell 405 well pad should meet all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Wetzel County location should be granted a 45CSR13 modification permit for their facility.

Jonathan Carney
Permit Writer

4/10/2017
DATE